Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal Form

Section 1. General administrative information

Restore Squaw and Papoose Watersheds

Bonneville project number, if an ongoing project 9607707

Business name of agency, institution or organization requesting funding
US Department of Agriculture, Forest Service, Clearwater National Forest

Business acronym (if appropriate)
CNF

Proposal contact person or principal investigator:

Name: Anne H. Connor
Mailing Address: 12730 Highway 12
City, ST Zip: Orofino, ID 83544
Phone: (208) 476-4541
Fax: (208) 476-8329
Email address: aconnor/r1_clearwater@fs.fed.us

Subcontractors

Organization	Mailing Address	City, ST Zip	Contact Name

NPPC Program Measure Number(s) which this project addresses

SECTION 7.1 - ENSURING BIODIVERSITY; SECTION 7.6 HABITAT GOALS, POLICIES, AND OBJECTIVES; SECTION 7.7 - COOPERATIVE HABITAT PROTECTION AND IMPROVEMENT WITH PRIVATE LANDOWNERS; SECTION 7.8 - IMPLEMENT STATE, FEDERAL, AND TRIBAL HABITAT IMPROVEMENTS.

NMFS Biological Opinion Number(s) which this project addresses

The Clearwater and Nez Perce National Forests have completed a biological assessment for activities affecting steelhead trout. The National Marine Fisheries Service is presently preparing the Biological Opinion which will be completed in January, 1998.

Other planning document references

BPA, 1997. Watershed Management Program: Final Environmental Impact Statement.

Clearwater National Forest and Nez Perce Tribe, 1997. Challenge Cost-Share Agreement between the Clearwater National Forest and the Nez Perce Tribe. Lapwai, ID.

Columbia Basin Fish and Wildlife Authority, 1997. Integrated Watershed Projects: The Process and Criteria for Selecting Watershed Projects for the Columbia Basin Fish and Wildlife Program.

Columbia River Fish and Wildlife Program, 1994. Columbia River Basin Is and Wildlife Program.

CRITFC, 1995. WY-KAN-USH-ME WA-KISH-WIT, Spirit of the Salmon. Vol. I and II Portland, OR.

Nez Perce Tribe Idaho Department of Fish and Game, 1990. Clearwater River Subbasin Salmon and Steelhead Production Plan. Northwest Power Planning Council and CBFWA. Boise, ID.

Subbasin

CLEARWATER SUBBASIN, Squaw and Papoose Creek Watersheds

Short description

Restore the Squaw and Papoose Creek Watersheds by continuing to obliterate excess roads that are a current or potential source of sediment delivery and stream degradation.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	X	Construction	X	Watershed
*	Resident fish		O & M		Biodiversity/genetics

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*	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate	*	Monitoring/eval.		Flow/survival
	Other	*	Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement	*	Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords

Road Obliteration, Revegetation, Slope Restoration

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
960770	Protecting and Restoring the Squaw and Papoose Creek Watersheds	Supplements the Cost-Share Agreement.

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2, 3	Objective	Task a,b,c	Task
1	Reduce sediment delivery into Squaw and Papoose Creek	a	Survey roads to identify obliteration needs.

	Watersheds		
		b	Obliterate roads.
		c	Revegetate with native species.
		d	Monitor and evaluate for stabilization and revegetation.
		e	Coordinate with NPT to complete a report on effects of road obliteration on the Squaw and PapooseWatershed over time.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	07/1999	10/1999	100%
			TOTAL 100.00%

Schedule constraints

Existing schedules for Fiscal Year 1999 may change due to weather conditions. All on-the-ground projects occur in mountainous areas at elevations up to 5500 feet above sea level where unpredictable weather patterns may occur.

Completion date. Enter the last year that the project is expected to require funding.

A five year plan is to be coordinated and developed for years 1999-2003 in the Squaw and

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Papoose Creek Watershed with the Nez Perce Tribe. Monitoring, evaluation and operation would continue beyond 2003.

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel	Project admin, inspection, labor, survey and planning	33439
Fringe benefits		
Supplies, materials, non-expendable property	Erosion control supplies (seed, blankets, mulch, etc.)	7024
Operations & maintenance		
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel	Incl. vehicle costs	1680
Indirect costs	Overhead	8782
Subcontracts	Equipment rental	56000
Other		
TOTAL		$106,925

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget				
O&M as % of total	$100,000	$100,000	$100,000	$100,000

Section 6. Abstract

The goal of this project, which is an extension of a larger cooperative restoration project with the Nez Perce Tribe (BPA #9607700), is to restore the Squaw and Papoose Creek Watersheds to assist in increasing water quality and anadromous and native fish populations. Due to logistical restrictions, the Cost Share Agreement with the Nez Perce Tribe is limited to 12 miles of obliteration. However, we have identified an additional eight miles of excess road that could be treated by the Clearwater National Forest to further meet the goals set forth in the Nez Perce Tribal Proposal. Road obliteration is a priority activity within this watershed to reduce sediment delivery to streams by decreasing the potential of mass failure and restoring hydrologic function. In association with the Nez Perce Tribe, monitoring and evaluation would be completed and a report produced researching how road obliteration has decreased sediment loads into Squaw and Papoose Creek Watersheds and their tributaries over time. The outcomes of our work, decreasing slope stability and sediment problems, protecting and enhancing investments into the watershed already made, and protecting fish and wildlife habitat, would be immediate. Monitoring of past road obliteration projects, and the Clearwater National Forest Landslide Study, 1997, show that even during the extremely high water yields of 1996 and 1997, no landslides initiated from an obliterated road. These outcomes would increase available fish and wildlife habitat, assist in enlarging their populations, meet our Forest Plan Standards, meet objectives of the Clean Water Act, PACFISH, the Endangered Species Act, and protect Nez Perce tribal treaties and culture.

Section 7. Project description

a. Technical and/or scientific background

Restore the Squaw and Papoose Creek Watershed using an overall watershed approach (as outlined in the NPPC Fish and Wildlife Program and the Anadromous Fish Restoration Plan of the Tribes), so it can return to its original state producing a healthy environment for fish and wildlife, and protecting Nez Perce Tribal treaty rights and culture is the main goal of this project.

During late November and early December 1995, Powell Ranger District experienced rainfall that exceeded the thirty year average monthly totals for November by 314 percent. Also during November and December, stream flows in Squaw and Papoose Creeks exceeded monthly means from 380 percent to 460 percent. Cumulative precipitation at Powell was 15.5 inches from October through November 26, when mass failures, debris torrents, and landslides began occurring on numerous forest roads, State Highway 12, and jammer roads built for timber harvest (Pipp, et. al., 1997). The problems in the watersheds are presently continuing and show great potential for further mass sediment delivery into crucial anadromous and resident fish spawning and rearing habitat.

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A field survey during the summer of 1996 identified and quantified 41 mass failures in Squaw Creek, and 76 in the Papoose Creek watershed. The survey showed that 44 percent of failures in Squaw were harvest-related, 51 percent were road related, and 5 percent were natural. In Papoose 18 percent were harvested related, 74 percent road related, 7 percent natural, and 1 percent caused by bank erosion (Pipp, et. al., 1997).

The Clearwater National Forest roads, jammer roads built for timber harvest, and natural sources have experienced numerous landslides and debris torrents. There are approximately 105 miles of those roads in the Squaw Creek Watershed and 111.5 in the Papoose Creek Watershed. As a result, bedload and sediment deposition has negatively impacted spawning and rearing habitat for salmon, steelhead, bull trout, and cutthroat trout (CRITFC, 1995) and increased cobble embeddedness within the watershed (Fuller, Johnson, and Bear, 1984), (King, 1993), (USFS and USBLM, 1997). Most instream habitat projects would not restore existing and future habitat unless the sources of sediment are alleviated.

Putting fish back into river and stream systems alone is not enough to restore their populations; they need a healthy system to return, spawn, and rear in. Our proposed objective would mitigate the problems stated above by reducing landslide potential, decreasing sediment input to rivers and streams, restoring and increasing fish habitat, including spawning areas. In addition, our proposal would continue analysis of the entire watershed for present and potentially future problems that will affect fish and wildlife habitat negatively.

b. Proposal objectives

OBJECTIVE: Alleviate Sediment Input from Road Sources within the Squaw and Papoose Creek Watersheds.
Product: A total of 8 miles of excess logging roads would be obliterated, returning the hillside as closely as possible to its original hydrologic state and removing the high risk of blow-outs and concentrated surface water flow. In conjunction with the Nez Perce Tribe, a monitoring and evaluation report would be produced including but not limited to; history of road obliteration in the Squaw and Papoose Creek Watershed; future obliteration; and analysis of sediment loads, cobble embeddedness, and overall water quality in streams versus the amount of road obliterated over time. This report would evaluate and analyze an overall measure of success. It would also determine what data collection is available by all involved agencies and what is needed in the future for a complete monitoring system.

c. Rationale and significance to Regional Programs

The Squaw and Papoose Creek Watershed is currently listed as a Water Quality Limited Segment (WQLS) by the State of Idaho under the terms of the Clean Water Act. The pollutant of concern is sediment. A WQLS stream does not meet standards set in the Clean Water Act. This proposal would reduce sediment in Squaw and Papoose Squaw and Papoose Creek, and thereby move us toward compliance with our Forest Plan, The

Clean Water Act, The Endangered Species Act, PACFISH, and the Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes.

Protecting and restoring the Squaw and Papoose Creek Watersheds is called for in the objectives and goals of the Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes (Volume I) as stated above in Section 7, Part (a) of this proposal. The project propose to serve an overall watershed plan to restore and protect the Squaw and Papoose Creek Watersheds, therefore, increasing anadromous and resident fish and wildlife habitat, assisting in enlarging their populations, and in turn, protecting Nez Perce Tribal treaty rights and culture.

A Challenge Cost-Share Agreement between the Clearwater National Forest and the Nez Perce Tribe has been used for all the work that has been done in 1997, would be used in 1998 and 1999 (CNF and NPT, 1997), and is in the process of being extended through the year 2003 (5-year plan). A verbal agreement has already been made between the two parties concerning this matter, with a memorandum of agreement (MOA) to be established in February of 1998. This agreement discusses the relationship between the two governments with regard to watershed management within the Squaw and Papoose Creek Watersheds, as well as the entire Clearwater National Forest.

Using the Challenge Cost-Share Agreement between the two parties, during the 1997 year, 9 miles of road within the Squaw and Papoose Creek Watersheds were obliterated and 10 would be completed in 1998 and 12 miles in 1999 (pending BPA approval). According to the agreement, the Clearwater National Forest is to analyze and identify priority roads to be obliterated. In the same agreement, the tribe would provide funding to cover the onsite contract administration and inspection, contractor and their equipment costs, and purchase of erosion control supplies (CNF and NPT, 1997). Due to logistical restrictions and their need to meet their many other obligations, the Nez Perce Tribe is unable to commit to more than 12 miles of road obliteration. This proposal identifies 8 additional miles in the Squaw and Papoose Creek Watersheds that would supplement the Tribal Proposal (BPA #9607700) and would be implemented independently by the Clearwater National Forest.

This proposed project would directly help fisheries projects already funded by BPA. BPA has allotted $1,500,000 to the Nez Perce Fisheries Program for the 1998 year to be used towards the Nez Perce Tribal Hatchery (NPTH). The NPTH will incubate and early rear fish in their facility and then release them into the natural environment to continue their freshwater rearing in their natural streams for another 6 months to 1 year prior to smolting. Squaw and Papoose Creeks are important spring chinook production ‘‘treatment” streams for NPTH. In order for the production program to achieve success, habitat conditions in the stream need to be as beneficial as possible. The objectives of this proposal will work to benefit fish and wildlife habitat for the Nez Perce Tribal Hatchery projects.

Approximately $233,000 has also been appropriated to the Nez Perce Tribal Fisheries Program by BPA, Project Number #8909802, for Salmon Supplementation in Idaho Rivers. Idaho Salmon Supplementation Studies is a cooperative research project of the IDFG, the NPT, Shoshone-Bannock Tribes and the U.S. Fish and Wildlife Service to test supplementation on an experimental basis. BPA funds the program through five projects,

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one of which is the NPT portion described in the Project Number above. As in NPTH, this supplementation program requires beneficial habitat conditions in order to be effective. This watershed project focuses on habitat improvement efforts in two of the supplementation streams, Squaw and Papoose Creeks. Although both of these streams offer important habitat for spring chinook, as well as steelhead and bull trout, both were severely impacted in the floods during the winter of 1995. Restoration work targets alleviating the potential for further habitat degradation in these supplementation streams by preventing road derived damage.

The project would work towards 7.6 Habitat Objective of the NPPC *Fish and Wildlife Program* (NPPC, 1994) to limit the percent of fine sediment in salmon and steelhead redds to no more than 20 percent and limit cobble embeddedness to less than 30 percent or documented historic condition. This objective would also work towards the overall goals and objectives of the Anadromous Fish Restoration Plan of the Tribes (CRITFC, 1995) in returning salmon back to the rivers and streams above Bonneville Dam and restoring healthy river systems.

d. Project History

The Nez Perce Tribal Fisheries/Watershed Program has been involved in road obliteration within the Squaw and Papoose Creek Watersheds since 1997, under BPA contract number 96-077-00. A Challenge Cost-Share Agreement between the Clearwater National Forest and the Nez Perce Tribe (CNF and NPT, 1997) was produced, signed by both parties, and used during the 1997 year to obliterate and revegetate 9 miles of road within the Squaw and Papoose Creek Watersheds. The Clearwater National Forest plans to obliterate 43 miles in 1998 of which 10 are Cost-Share with the Tribe (pending BPA approval). A grand total of 61 miles have been identified so far for obliteration and re-vegetation. Our cost associated with road obliteration for the 1997 season totaled $42,000 and is projected to be $390,000 in 1998.

e. Methods

METHODOLOGY

Road obliteration and the related tasks, as stated in section four of this proposal, would be achieved by outsloping or recontouring, and revegetating excess roads constructed for timber harvest in the Squaw and Papoose Creek Watersheds. The primary objective for road obliteration in the Squaw and Papoose Creek Watersheds is to reduce watershed degradation by reclaiming roads that are no longer a necessary part of the forest's transportation System. The scope and general methods are given below:

SCOPE:

Obliterate and re-vegetate 8 miles of excess logging roads within the Squaw and Papoose Creek Watersheds.

METHODS:

!Remove culverts and other drainage structures that require maintenance.

!Open up stream channels by laying back side slopes as much as feasible.

!Pull up fill materials where failures exist or are impending,

!Out-slope the road surface and/or construct waterbars across to avoid concentrating runoff.

!Lay unstable portions of the road back to its original contours

!Re-vegetate with native grass, forb and shrub species

!Monitor and evaluate obliterated roads for soil stabilization, blow-outs, and vegetation re-growth.

!Complete analysis report and distribute to all involved or interested parties.

In conjunction with the Nez Perce Tribe, a report would be produced studying and analyzing all data within the Squaw and Papoose Creek Watersheds concerning road obliteration including, but not limited to; history of road obliteration in the Squaw and Papoose Creek Watersheds; number, name, and location of roads obliterated; future obliteration; analysis of sediment loads, cobble embeddedness, and overall water quality in streams versus the amount of roads obliterated over time. This report would produce an overall measure of success. It would also determine what data collection is available by all involved agencies and what is needed in the future for a complete monitoring system.

As required under the Challenge Cost Share Agreement (CNF and NPT, 1997), the Clearwater National Forest analyzed the Squaw and Papoose Subbasins and identified a total of 61 miles of road needed for obliteration so far. Up to date, 9 miles have been obliterated in 1997 by the Forest and the Nez Perce Tribal Fisheries/Watershed Program and 43 miles are planned for 1998 10 of which are Cost-Share with the Tribe (pending BPA approval). With time constraints and money available between the two agencies on other projects, 12 miles of road have been planned for obliteration in the Squaw and Papoose Creek Watersheds for 1999. This proposal would remove an additional 8 miles to supplement the Challenge Cost Share Agreement for 1999.

Monitoring and evaluation of the obliterated roads would continue for 5 years after completion. The obliterated roads would be observed by either walking or helicopter and evaluated for blow-outs, soil stabilization, and vegetation regrowth. The water quality data collected on the streams of impacted concerning sedimentation would also be monitored and evaluated. Monitoring and evaluation results would be presented in a final report by the Nez Perce Fisheries. Yearly monitoring and evaluation reports would also be compiled.

The results from the proposed project would be restoring the Squaw and Papoose Creek Watersheds so it may return to its original state, produce a healthy environment for fish and wildlife, assist in enlarging their populations, and in turn protecting Nez Perce tribal treaties and culture using an overall watershed approach. The direct results over time for the watershed would include decreasing sediment into streams and tributaries to restore overall aquatic and watershed heath.

f. Facilities and equipment

ROAD OBLITERATION

!EQUIPMENT: Excavator and/or Bulldozer

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NUMBER: 1 of each.
IS OWNED OR TO BE PURCHASED OR RENTED: Rented
USE: The excavator and/or Bulldozer would be used to return excess roads constructed for timber harvest to their original contours, remove existing culverts and scarify the ground for drainage and ease of revegetation.
!EQUIPMENT: Vehicles
NUMBER: 3
IS OWNED OR TO BE PURCHASED OR RENTED: Owned
USE: The vehicles would be used to transport employees, equipment, materials, and ATV.
!EQUIPMENT: ATV
NUMBER: 1
IS OWNED OR TO BE PURCHASED OR RENTED: Owned
USE: The ATV would be used to transport equipment and materials to the work site.
!EQUIPMENT: Seeder
NUMBER: 2
IS OWNED OR TO BE PURCHASED OR RENTED: Owned
USE: Spreads seed and fertilizer efficiently.

g. References

CNF and NPT (Clearwater National Forest and Nez Perce Tribe). 1997. Challenge Cost-Share Agreement between the Clearwater National Forest and the Nez Perce Tribe. Lapwai, Idaho.

Clearwater National Forest Plan, Clearwater National Forest, 1987.

Clearwater National Forest Landslide Study, Clearwater National Forest, 1997.

CRITFC (Columbia River Inter-Tribal Fish Commission). 1995. WY-KAN-USH-MI WA-KISH-WIT, Spirit of the Salmon, The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes. Volume I. Portland, Oregon.

EPA (Environmental Protection Agency). 1997. Idaho TMDL development schedule: EPA review and evaluation.

Fuller, Johnson, and Bear. 1984. A biological and physical inventory of the streams within the lower Clearwater River Basin, Idaho. Nez Perce Tribal Fisheries.

Nez Perce Treaty of 1855 with the United States Federal Government.

NPT and IDFG (Nez Perce Tribe and Idaho Department of Fish and Game). 1990. Clearwater River Subbasin: Salmon and Steelhead Production Plan.

NMFS (National Marine Fisheries Service). 1997. Salmon Recovery Plan for the Snake River.

NPPC (Northwest Power Planning Council). 1994. Columbia River Basin Fish and Wildlife Program.

USDA (United States Department of Agriculture). 1997. National Indian Forest Resource Management Act, Public Law 101-630.

USFS and USBLM, 1997.

Section 8. Relationships to other projects

Currently, the Clearwater National Forest is working under a Challenge Cost Share Agreement with the Nez Perce Tribe. This agreement will be amended to continue through the year 2003 (5-year plan). This agreement discusses the relationship between the two governments with regard to watershed management with the Squaw and Papoose Creek Watersheds and the Clearwater National Forest.

According to the Nez Perce Treaty of 1855 with the Federal Government, the government has a trust agreement to protect all tribal resources. This proposal would work towards protecting our resources, therefore fulfilling the federal government trust responsibilities.

This project would directly help fisheries projects already funded by BPA. BPA has allotted $1,500,000 to the Nez Perce Tribal Hatchery (NPTH). The NPTH will incubate and early rear fish in their facility and then release them into the natural environment to continue their freshwater rearing, two of which are Squaw and Papoose Creeks. These creeks are important spring chinook production ‘‘treatment” streams for NPTH. In order for their program to achieve success, habitat conditions in the stream need to offer as beneficial conditions as possible. The objectives of this proposal would work to benefit fish and wildlife habitat for the Nez Perce Tribal Hatchery projects.

Approximately $233,000 has also been appropriated to the Nez Perce Tribal Fisheries Program by BPA, Project Number #8909802, for Salmon Supplementation in Idaho Rivers. Idaho Salmon Supplementation Studies is a cooperative research project of the IDFG, the NPT, the Shoshone-Bannock Tribes, and the U.S. Fish and Wildlife Service to test supplementation on an experimental basis. BPA funds the program through five projects, one which is the NPT portion described in the Project Number above. As in NPTH, this supplementation program requires beneficial habitat conditions in order to be effective. This watershed project focuses on habitat improvement efforts in two of the supplementation streams, Squaw and Papoose Creeks. Although both of these streams offer important habitat for spring chinook, as well as steelhead and bull trout, both were severely impacted in the floods during winter 1995. Restoration work targets alleviating the potential for further habitat degradation in these supplementation streams.

The Clearwater Focus Watershed Program (BPA #970600) is co-coordinated by Ira

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Jones of the *Nez Perce Tribal Fisheries/Watershed Management Program* and Janet Hohle of the *Idaho Soil Conservation Commission*. They would work directly with this project by coordinating multiple jurisdictions, multiple agencies, and multiple private landowners of this projects area, in efforts to protect and restore anadromous fisheries habitat within the Squaw and Papoose Creek Watersheds. The two co-coordinators are funded by BPA.

Section 9. Key personnel

NAME: Anne Hall Connor
TITLE: Watershed Rehabilitation Engineer
POSITION/HOURS: FTE
DUTIES ON PROJECT: Annie co-ordinates the road obliteration program on the Clearwater National Forest. This involves providing technical expertise and training to the district level co-ordinators and inspectors, serving as the contracting officer's representative (COR) on road obliteration projects and overseeing the budget and management of the program.

DEGREES: M.S. in Civil Engineering, University of Idaho, December 1991
B.S. in Forest Management, West Virginia University, May 1983

CERTIFICATION STATUS: Civil Engineer-in-training

CURRENT RESPONSIBILITIES: Anne co-ordinates the road obliteration and watershed rehabilitation program on the Clearwater National Forest.

PREVIOUS EMPLOYMENT: Anne has worked for the U. S. Forest Service from 1987 to present in engineering including road design and maintenance, contract preparation and construction inspection. Anne has run a growing watershed restoration and road obliteration program since 1993. From 1983 to 1987, Anne worked a variety of seasonal jobs with the Forest Service including timber sale preparation and administration, silvicultural examination, and river and wilderness ranger.

EXPERTISE: Major emphasis in graduate program was water resources engineering with thesis on Hydraulic Design of Fish Habitat Structures. Other training has included: Instream Flow Incremental Methodology, Applied Fluvial Geomorphology, Basic Road Design, Native Grass Workshop, Contract Administration.

NAME: Christine A. Cary
TITLE: Hydrologic Technician
FTE/HOURS: Term Appt. 13/13
DUTIES OF PROJECT: Assists the Road Obliteration Coordinator in providing technical expertise to the districts and project planning and implementation. Trains and assists district personnel in performing inventories, contract inspection, channel work and

erosion control. Determines heavy equipment needs for individual projects.

QUALIFICATIONS: Christine has three years experience coordinating road obliteration. Prior to coming to the Clearwater National Forest, she worked as a hydrologic technician for two years on the Idaho Panhandle National Forest where she was in charge of road obliteration and watershed NEPA. She also worked seasonally for the Forest Service as a forestry technician from 1988-1992 while attending Boise State University, where she earned Bachelors' in English and communications, and minors in biology and education. Christine is experienced as a COR and inspector.

DEGREES: Bachelors of Arts in Communication and English and some graduate work toward a Masters of Public Administration.

PREVIOUS EMPLOYMENT:
1997-PresentClearwater National Forest GS-1316-07
1995-1997 Idaho Panhandle National Forest GS-1316-05-02
1993-1995Asia University America Program Student Services Coordinator, Boise
1988-1993 Idaho Panhandle National Forest (Seasonal) GS-1462-04

NAME: Micheal Pipp
TITLE: Hydrologic Technician
FTE/HOURS: Term Appt. 13/13
DUTIES OF PROJECT: Coordinates the road obliteration program on Powell district. Supervises several inspectors as well as serving as an inspector himself. Provides district level project planning and implementation. Preforms and provides supervision in road inventory, contract inspection, channel work and erosion control.

QUALIFICATIONS: Micheal has worked in hydrology for four years for the forest service doing stream monitoring, watershed evaluation and rehabilitation, flood assessment and watershed improvement needs inventory. Micheal has one year of experience as a project coordinator and inspector.

DEGREES: Masters of Science in Geography, University of Montana, 1997.
Bachelor of Science in Outdoor Recreation, Colorado State University, 1986

PREVIOUS EMPLOYMENT:
1997-PresentClearwater National Forest GS-1316-07
1994-1996 Clearwater National Forest GS-404-04/5

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NAME: Mark VanderVelden
TITLE: Hydrologic Technician
FTE/HOURS: Term Appt. 13/13
DUTIES OF PROJECT: Coordinates the road obliteration program on Pierce and Lochsa districts. Supervises several inspectors as well as serving as an inspector himself. Provides district level project planning and implementation. Preforms and provides supervision in road inventory, contract inspection, channel work and erosion control.

QUALIFICATIONS: Mark has worked in hydrology for five years for the forest service doing stream monitoring, watershed rehabilitation, and watershed improvement needs inventory. Prior to coming to the Clearwater National Forest, he worked seasonally as a hydrologic technician for four years on the Bitterroot and Payette National Forests. He also worked seasonally for the Forest Service in various positions from 1985-1991 while attending University of Montana, where he earned Bachelors' in geography with a watershed emphasis. Mark has one year of experience as a project coordinator and inspector.

DEGREES: Bachelors of Arts in Geography, University of Montana, 1992.

PREVIOUS EMPLOYMENT:
1997-PresentClearwater National Forest GS-1316-07
1995-1996 Bitterroot National Forest GS-1316-06
1992-1995Payette National Forest (Seasonal) GS-1316-05

Section 10. Information/technology transfer

The forest service has a required obligation to provide research, transfer of technology, and technical assistance to Indian tribal governments (USDA, 1997). A relationship with the Clearwater National Forest has been established and has had a very positive impact on both organizations and is expected to continue in the future. This relationship has leaded to several agreements, both verbal and written, for the completion of numerous projects within the Clearwater Subbasin.

A verbal agreement (to be included in a memorandum of understanding at a later date) has been made with the Clearwater National Forest to assist Emmit E. Taylor Jr. (Civil Engr., EIT) in obtaining his professional engineering license. The forest service engineers will oversee Mr. Taylor's designs and the implementation of these designs. During the next 3 years he will seek qualifications to take the State of Idaho Professional Engineer License Exam.

A report would be produced studying and analyzing all data within the Squaw and Papoose Creek Watersheds concerning road obliteration, and would include, but not be limited to; history of road obliteration in the Watersheds; number, name, and location of road obliterated; future obliteration; analysis of sediment loads, cobble embeddedness, and overall water quality in streams versus percent of road obliterated over time. This report would produce the overall measure of road obliteration success and determine what is

needed in the future for a complete monitoring system. This report would be completed in coordination with the Clearwater National Forest and distributed to all parties involved or interested.

Quarterly reports would be assembled stating, but not limited to, project status, time lines, dollars spent, and problems that need to be addressed during the coming quarter. The end of the year report would compile all data from the quarterly reports determining accomplishments achieved during the previous work season and what information, both negative and positive, can be applied to the upcoming season. These reports would also be distributed to all parties involved and interested.

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